WE CLAIM:

1   1.   A method for providing feedback during an inspection of an object, the

2   method comprising:

3   receiving first image data representing the object, the first image data being

4   produced using an image parameter;

5   determining parameter modification information for the image parameter from

6   the first image data;

7   modifying the image parameter to a modified image parameter with the

8   parameter modification information; and

9   receiving second image data representing the object, the second image data

10   being produced using the modified image parameter.

1   2.   The method of Claim 1, wherein the image parameter is an image acquisition

2   parameter.

1   3.   The method of Claim 2, wherein said determining includes processing the first

2   image data to calculate the parameter modification information for the image acquisition

3   parameter.

1   4.   The method of Claim 2, wherein said producing the first image data includes

2   capturing a first image of the object, and wherein said producing the second image data

3   includes capturing a second image of the object.

1   5.   The method of Claim 4, wherein said determining further includes

2   determining an incorrect classification of at least one feature of the object based on the first

3   image data as a result of an original setting of the image acquisition parameter, calculating

4   the parameter modification information to correct the incorrect classification and modifying

5   the original setting of the image acquisition parameter to a modified setting based on the

6   parameter modification information.

1   6.   The method of Claim 5, wherein said producing the first image data includes

2   producing first raw image data representing the first image using the original setting of the

3   image acquisition parameter, and wherein said producing the second image data includes

4   producing second raw image data representing the second image using the modified setting of

5   the image acquisition parameter.

1   7.   The method of Claim 2, wherein the image acquisition parameter is at least

2   one of an illumination parameter, resolution parameter, sensor parameter or image view

3   parameter.

1   8.   The method of Claim 1, wherein the at least one parameter is an image

2   processing parameter.

1   9.   The method of Claim 8, wherein said determining includes determining an

2   incorrect classification of at least one feature of the object based on the first image data as a

3   result of an original setting of the image processing parameter, calculating the parameter

4   modification information to correct the incorrect classification and modifying the original

5   setting of the image processing parameter to a modified setting based on the parameter

6   modification information.

1   10.   The method of Claim 9, wherein said producing the first image data includes

2   processing raw image data representing an image of the at least one feature of the object

3   using the original setting of the image processing parameter to produce the first image data,

4   and wherein said producing the second image data includes processing the raw image data

5   using the modified setting of the image processing parameter to produce the second image

6   data.

1   11.   The method of Claim 8, wherein the image processing parameter is at least

2   one of a processing type parameter or a processing complexity parameter.

1   12.   A method for providing feedback during an inspection of an object, the

2   method comprising:

3   setting at least one image acquisition parameter to capture a first image of the

4   object;

5   determining parameter modification information from image data representing

6   the first image; and

7   modifying the image acquisition parameter based on the parameter

8   modification information to capture a second image of the object.

1   13.   The method of Claim 12, wherein said determining includes processing the

2   image data to measure the parameter modification information.

1   14.   The method of Claim 12, wherein said determining further includes

2   determining an incorrect classification of at least one feature of the object based on the image

3   data as a result of said setting.

1   15.   The method of Claim 13, wherein said determining the parameter modification

2   information further includes determining the parameter modification information to correct

3   the incorrect classification and produce an adequate classification from the second image.

1   16.   The method of Claim 12, wherein the image acquisition parameter is at least

2   one of an illumination parameter, resolution parameter, sensor parameter or image view

3   parameter.

1   17.   An inspection system for providing feedback during an inspection of an

2   object, comprising:

3   a processor connected to receive first image data representing the object, the

4   first image data being produced using an image parameter, said processor being operable to

5   determine parameter modification information for the image parameter from the first image

6   data for use in producing second image data representing the object.

1   18.   The inspection system of Claim 17, further comprising:

2   a sensor disposed in relation to the object to receive illumination projected

3   from the object, capture a first image of the object and produce first raw image data

4   representing the first image, said sensor being connected to provide the first raw image data

5   to said processor.

1   19.   The inspection system of Claim 18, wherein said processor includes an image

2   analysis processor operable to process the first raw image data to produce first processed

3   image data.

1   20.   The inspection system of Claim 19, wherein the first raw image data is the

2   first image data, and wherein the image analysis processor is operable to process the first raw

3   image data to measure the parameter modification information for the image parameter.

1   21.   The inspection system of Claim 19, wherein the first processed image data is

2   the first image data, and wherein said processor further includes a classification processor

3   connected to receive the processed image data, determine an incorrect classification of at

4   least one feature of the object based on the processed image data as a result of an original

5   setting of the image parameter, calculate the parameter modification information to correct

6   the incorrect classification and modify the original setting of the image parameter to a

7   modified setting based on the parameter modification information.

1   22.   The inspection system of Claim 21, wherein said sensor is further configured

2   to capture a second image of the object and produce second raw image data representing the

3   second image using the modified setting of the image parameter.

1   23.   The inspection system of Claim 21, wherein said image analysis processor is

2   further operable to process the first raw image data using the modified setting of the image

3   parameter to produce second processed image data.

1   24.   The inspection system of Claim 23, wherein the image parameter is at least

2   one of a processing type parameter or a processing complexity parameter.

1   25.   The inspection system of Claim 18, wherein the image parameter is a sensor

2   parameter associated with said sensor.

1   26.   The inspection system of Claim 25, wherein the sensor parameter is at least

2   one of an exposure duration of said sensor or a resolution associated with the first raw image

3   data.

1   27.   The inspection system of Claim 18, wherein the image parameter is a view

2   parameter controlling the positional relationship between said sensor and the object.

1   28.   The inspection system of Claim 18, further comprising:

2   an illumination source disposed in relation to the object to illuminate the

3   object, the image parameter being an illumination parameter controlling said illumination

4   source.

1   29.   The inspection system of Claim 28, wherein said illumination source

2   illuminates the object with a beam of X-rays.

1   30.   The inspection system of Claim 28, wherein said illumination source

2   illuminates the object with light